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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,975	12/29/2000	Charles Elkins	V199-1933	9062

7590 04/13/2009

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ART UNIT	PAPER NUMBER
3724	

MAIL DATE	DELIVERY MODE
04/13/2009	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES ELKINS and DENNIS PERRY

Appeal 2009-0124
Application 09/751,975
Technology Center 3700

Decided:[1] April 13, 2009

Before JENNIFER D. BAHR, MICHAEL W. O'NEILL, and STEFAN STAICOVICI, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Charles Elkins et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 18, 20, and 21. Claims 1-17 and 19 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

The Appellants' invention is drawn towards a method and apparatus for separating circuit boards from a multiple pre-scored board array. Specification 1, ll. 4-8 and fig. 3.

Claims 18 and 20 are representative of the claimed invention and read as follows:

> 18. A method of separating individual circuit boards from a multiple board array with pre-scored planes comprising:
>
> aligning one of the pre-scored planes with a splitting element,
>
> affixing a removable shield element to an individual circuit board portion of the multiple board array;
>
> loading the removable shield element to reduce board flex; and
>
> inducing torque on the multiple board array such that the multiple board array is forced onto the splitting element and breaks along the pre-scored plane.
>
> 20. An apparatus for separating individual circuit board from a multiple board array with pre-scored planes and a plurality of electrical components comprising:

at least one splitting element positioned along one of the pre-scored planes; and

at least one torque inducing element using surface loading to mechanically force the multiple board array onto said at least one splitting element and thereby breaking the multiple board array along the pre-scored plane said at least one torque inducing element forcing the multiple board array without loading the plurality of electrical components,

wherein said torque inducing element applies said surface loading to the multiple board array by way of a shield element attached to the individual circuit board such that the plurality of electrical components remain undamaged; and

a transport element for automatically aligning one of the pre-scored planes with said at least one splitting element.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Boyd	US 3,562,058	Feb. 9, 1971

The Appellants seek review of the Examiner's rejection of claims 18, 20, and 21 under 35 U.S.C. § 102(b) as anticipated by Boyd.

THE ISSUE

Have the Appellants demonstrated that the Examiner erred in determining that Boyd teaches (1) aligning the splitting element with one of

the pre-scored planes and (2) a transport element for aligning the splitting element with one of the pre-scored planes?

SUMMARY OF DECISION

We REVERSE.

FINDINGS OF FACT

The following enumerated findings of facts (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Boyd discloses a method and device for separating a semiconductor wafer having a large number of circuits formed thereon into a plurality of discrete sections. Boyd, col. 1, ll. 29-33.
2. Boyd further discloses forming orthogonal scribe marks (pre-scored planes) on the wafer, placing the scribed wafer 6 on a first plastic film 2, covering the wafer with a high temperature material film 3 and a second plastic film 4, which is sealed to the first plastic film 2, drawing a vacuum between plastic films 2 and 4 to form an encapsulated wafer, placing the encapsulated wafer onto mat 32 (splitting element), passing a roller 10 (torque inducing element) over the encapsulated wafer, and breaking the wafer along the scribe marks. After the first roller pass is made the wafer is rotated 90^{O} and a second pass is made to break the wafer into a plurality of semiconductor segments. Boyd, col. 2, ll. 28-39; col. 2, l. 71 through col. 3, l. 1; col. 3, ll. 6-17; and figs. 1 and 2.

3. The encapsulated wafer is oriented such that the "scribed surface faces the breaking pad 32 and the scribed lines are aligned parallel to the axis of the roller." Boyd, col. 3, ll. 9-11.

4. In a separate operation, after the semiconductor wafer has been broken into a plurality of semiconductor segments, the encapsulated semiconductor segments are placed on a vacuum mold including a mold 20 and a retainer ring 21. Boyd, col. 3, ll. 56-57 and 64 and fig. 4.

5. An ordinary and customary meaning of the term "align" is "to be in or come into precise adjustment or correct relative position." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 28 (Tenth Ed. 1997).

PRINCIPLES OF LAW

Claim Construction

When construing claim terminology in the United States Patent and Trademark Office, claims are to be given their broadest reasonable interpretation consistent with the specification, reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631 (1987).

It is not necessary that the reference teach what the subject application teaches, but only that the claim read on something disclosed in the reference,

i.e., that all of the limitations in the claim be found in or fully met by the reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772 (Fed. Cir. 1983).

OPINION

Both claims 18 and 21 require a process step of "aligning one of the pre-scored planes with a splitting element." According to the Examiner, the pad 32 of Boyd satisfies the limitation of the claimed "splitting element" because "item 32 clearly assists in the splitting of the circuit boards (column 3 lines 10-13) and is clearly called a 'breaking pad'." Ans. 4. Further, the Examiner interprets the term "aligned" to mean that "any two items are aligned at any given time" because "there is a straight line to any two points [at] any given time." Ans. 4. The Examiner finally concludes that because the "breaking pad 32 is clearly underneath one of the pre-scored planes" and "any two items are aligned at any given time," the "pre-scored plane of the circuit board array is on the breaking pad and therefore is aligned therewith." Ans. 4.

Although we agree with the Examiner that the breaking pad 32 of Boyd satisfies the limitation of a "splitting element," we find the Examiner's interpretation of the term "aligned" unreasonably broad. That is, according to the Examiner, as long as a line can be drawn between two points on two components respectively, then the two components are "aligned." Hence, according to the Examiner, any two components that occupy a defined space and are in any relative position to each other are "aligned" as long as a line can be drawn between two points on the two components, respectively. Such an interpretation would eviscerate the meaning of the term "aligned" as understood by a person of ordinary skill in the art. As noted above, claims

are to be given their broadest reasonable interpretation consistent with the Specification. An ordinary and customary meaning of the term "aligned" is "to be in or come into precise adjustment or correct relative position" (FF 5).

In this case, Boyd teaches a method and a device for separating a semiconductor wafer having a large number of circuits formed thereon into a plurality of discrete sections by forming orthogonal scribe marks (pre-scored planes) on the wafer and breaking the wafer along the scribe marks using a roller (torque inducing element) and a breaking pad (splitting element) (FF 1 and 2). Boyd further teaches that in order for breakage to occur along the scribe marks (pre-scored planes) the scribed lines must be "*aligned* parallel to the axis of the roller [10]" (FF 3). (Emphasis added). Hence, according to Boyd, the scribed lines (pre-scored planes) must be in a parallel relationship (correct relative position) with respect to the axis of the roller (torque inducing element), *i.e.*, must be "aligned" parallel to the roller's axis. As such, Boyd teaches that the pre-scored planes (scribe lines) are aligned with the torque inducing element (roller 10) and not the splitting element (breaking pad 32), as required by claims 18 and 21. Therefore, Boyd does not teach all the elements of claims 18 and 21. Accordingly, the rejection of claims 18 and 21cannot be sustained.

With respect to claim 20, for the reasons discussed above, we find that the apparatus of Boyd lacks "a transport element for automatically aligning one of the pre-scored planes with said at least one splitting element." Moreover, we note that the retainer ring 21 of Boyd, which the Examiner interprets as the claimed "transport element," (Ans. 3) is part of a separate mold device 20 which is used after the wafer has been broken into a plurality of semiconductor segments (FF 4). Hence, we find that Boyd does not teach a device for separating a semiconductor wafer into a plurality of discrete

sections including a "transport element" for aligning a pre-scored plane (scribe line) with the splitting element (breaking pad 32). Accordingly, the rejection of claim 20 will not be sustained.

CONCLUSION

The Appellants have failed to demonstrate that the Examiner erred in determining that Boyd teaches (1) aligning the splitting element with one of the pre-scored planes and (2) a transport element for aligning the splitting element with one of the pre-scored planes.

DECISION

The decision of the Examiner to reject claims 18, 20, and 21 is reversed.

REVERSED

mls

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